

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1 – 40 (canceled).

41. (new) A modified starch obtainable from a transgenic plant cell, or from a plant comprising said plant cell, said plant cell exhibiting a reduction in the amount of a protein that is present in the plant cell in starch granule-bound form as well as in soluble form and that is involved in the phosphorylation of starch when expressed in plants and/or that increases the phosphorylation of glycogen when expressed in *E. coli*, said protein encoded by a nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule encoding a protein with the amino acid sequence indicated in SEQ ID NO: 2;

(b) a nucleic acid molecule comprising the coding region of the nucleotide sequence indicated in SEQ ID NO: 1;

(c) a nucleic acid molecule hybridizing to the nucleic acid molecule of (a) or (b) under stringent conditions;

(d) a nucleic acid molecule that has more than 80% sequence identity to the nucleic acid molecule of (a) or (b); and

(e) a nucleic acid molecule the sequence of which is degenerate as a result of the genetic code to the nucleic acid molecule of (a) or (b) or (c) or (d);

wherein said modified starch has a phosphate content reduced by at least 50% compared to starch from a non-transgenic plant cell.

42. (new) The modified starch of claim 41, wherein the phosphate content is reduced by at least 75% compared to starch from a non-transgenic plant cell.

43. (new) The modified starch of claim 42, wherein the phosphate content is reduced by more than 80% compared to starch from a non-transgenic plant cell.

44. (new) The modified starch of any one of claims 41-43, wherein said plant cell is a potato plant cell.

45 (new) A food comprising the modified starch of any one of claims 41-43.

46. (new) A food comprising the modified starch of claim 44.

47 (new) An industrial product comprising the modified starch of any one of claims 41-43.

48. (new) An industrial product comprising the modified starch of claim 44.

49. (new) The industrial product of claim 47, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

50. (new) The industrial product of claim 48, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

51. (new) A modified starch obtainable from a transgenic plant cell, or from a plant comprising said plant cell, said plant cell exhibiting reduced GBSS-I activity and exhibiting a reduction in the amount of a protein that is present in the plant cell in starch granule-bound form as well as in soluble form and that is involved in the phosphorylation of

starch when expressed in plants and/or that increases the phosphorylation of glycogen when expressed in *E. coli*, said protein encoded by a nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule encoding a protein with the amino acid sequence indicated in SEQ ID NO: 2;

(b) a nucleic acid molecule comprising the coding region of the nucleotide sequence indicated in SEQ ID NO: 1;

(c) a nucleic acid molecule hybridizing to the nucleic acid molecule of (a) or (b) under stringent conditions;

(d) a nucleic acid molecule that has more than 80% sequence identity to the nucleic acid molecule of (a) or (b); and

(e) a nucleic acid molecule the sequence of which is degenerate as a result of the genetic code to the nucleic acid molecule of (a) or (b) or (c) or (d);

wherein the amylose content of said modified starch is below 5% and wherein the phosphate content of said modified starch is reduced by at least 50% compared to starch from a non-transgenic plant cell.

52. (new) The modified starch of claim 51, wherein the amylose content is below 2%.

53. (new) The modified starch of claim 51 or 52, wherein said plant cell is a potato plant cell.

54. (new) A food comprising the modified starch of claim 51 or 52.

55. (new) A food comprising the modified starch of claim 53.

56. (new) An industrial product comprising the modified starch of claim 51 or 52.

57. (new) An industrial product comprising the modified starch of claim 53.

58. (new) The industrial product of claim 56, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

59. (new) The industrial product of claim 57, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

60. (new) A modified starch obtainable from a transgenic plant cell, or from a plant comprising said plant cell, wherein the synthesis of a branching enzyme is reduced in said plant cell and wherein said plant cell exhibits a reduction in the amount of a protein that is present in the plant cell in starch granule-bound form as well as in soluble form and that is involved in the phosphorylation of starch when expressed in plants and/or that increases the phosphorylation of glycogen when expressed in *E. coli*, said protein encoded by a nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule encoding a protein with the amino acid sequence indicated in SEQ ID NO: 2;

(b) a nucleic acid molecule comprising the coding region of the nucleotide sequence indicated in SEQ ID NO: 1;

(c) a nucleic acid molecule hybridizing to the nucleic acid molecule of (a) or (b) under stringent conditions;

(d) a nucleic acid molecule that has more than 80% sequence identity to the nucleic acid molecule of (a) or (b);and

(e) a nucleic acid molecule the sequence of which is degenerate as a result of the genetic code to the nucleic acid molecule of (a) or (b) or (c) or (d);

wherein the amylose content of said modified starch is increased compared to starch from a non-transgenic plant cell.

61. (new) The modified starch according to claim 60, wherein the amylose content is more than 50%.

62. (new) The modified starch according to claim 61, wherein the amylose content is more than 60%.

63. (new) The modified starch according to any one of claims 60-62, wherein said modified starch has a phosphate content reduced by at least 50% compared to starch from a non-transgenic plant cell.

64. (new) The modified starch according to claim 63, wherein said modified starch has a phosphate content reduced by at least 75% compared to starch from a non-transgenic plant cell.

65. (new) The modified starch according to any one of claims 60-62, wherein said plant cell is a potato plant cell.

66. (new) The modified starch according to claim 63, wherein said plant cell is a potato plant cell.

67. (new) The modified starch according to claim 64, wherein said plant cell is a potato plant cell.

68. (new) A food comprising the modified starch of any one of claims 60-62.

69. (new) A food comprising the modified starch of claim 63.



70. (new) A food comprising the modified starch of claim 64.
71. (new) A food comprising the modified starch of claim 65.
72. (new) A food comprising the modified starch of claim 66.
73. (new) A food comprising the modified starch of claim 67.
74. (new) An industrial product comprising the modified starch of any one of claims 60-62.
75. (new) An industrial product comprising the modified starch of claim 63.
76. (new) An industrial product comprising the modified starch of claim 64.

77. (new) An industrial product comprising the modified starch of claim  
65.

78. (new) An industrial product comprising the modified starch of claim  
66.

79. (new) An industrial product comprising the modified starch of claim  
67.

80. (new) The industrial product of claim 74, which is selected from the  
group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer,  
medicine, toothpaste, and coal.

81. (new) The industrial product of claim 75, which is selected from the  
group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer,  
medicine, toothpaste, and coal.

82. (new) The industrial product of claim 76, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

83. (new) The industrial product of claim 77, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

84. (new) The industrial product of claim 78, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

85. (new) The industrial product of claim 79, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

86. (new) A modified starch obtainable from a transgenic plant cell, or from a plant comprising said plant cell, wherein the synthesis of a branching enzyme is reduced in said plant cell and wherein said plant cell exhibits a reduction in the amount of a protein that is present in the plant cell in starch granule-bound form as well as in soluble

form and that is involved in the phosphorylation of starch when expressed in plants and/or that increases the phosphorylation of glycogen when expressed in *E. coli*, said protein encoded by a nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule encoding a protein with the amino acid sequence indicated in SEQ ID NO: 2;

(b) a nucleic acid molecule comprising the coding region of the nucleotide sequence indicated in SEQ ID NO: 1;

(c) a nucleic acid molecule hybridizing to the nucleic acid molecule of (a) or (b) under stringent conditions;

(d) a nucleic acid molecule that has more than 80% sequence identity to the nucleic acid molecule of (a) or (b); and

(e) a nucleic acid molecule the sequence of which is degenerate as a result of the genetic code to the nucleic acid molecule of (a) or (b) or (c) or (d);

wherein the aqueous solution of this modified starch shows almost no increase in viscosity during heating or cooling in the Rapid Visco Analyser compared to an aqueous solution of a starch from a non-transgenic plant cell.

87. (new) The modified starch of claim 86, wherein the amylose content is more than 50%.

88. (new) The modified starch of claim 87, wherein the amylose content is more than 60%.

89. (new) The modified starch of any one of claims 86-88, wherein said modified starch has a phosphate content reduced by at least 50% compared to starch from a non-transgenic plant cell.

90. (new) The modified starch of claim 89, which has a phosphate content reduced by at least 75% compared to starch from a non-transgenic plant cell.

91. (new) The modified starch of any one of claims 86-88, wherein said plant cell is a potato plant cell.

92. (new) The modified starch of claim 89, wherein said plant cell is a potato plant cell.

93. (new) The modified starch of claim 90, wherein said plant cell is a potato plant cell.

94. (new) A food comprising the modified starch of any one of claims 86-88.

95. (new) A food comprising the modified starch of claim 89.

96. (new) A food comprising the modified starch of claim 90.

97. (new) A food comprising the modified starch of claim 91.

98. (new) A food comprising the modified starch of claim 92.

99. (new) A food comprising the modified starch of claim 93.

100. (new) An industrial product comprising the modified starch of any one of claims 86-88.

101. (new) An industrial product comprising the modified starch of claim 89.

102. (new) An industrial product comprising the modified starch of claim 90.

103. (new) An industrial product comprising the modified starch of claim 91.

104. (new) An industrial product comprising the modified starch of claim 92.

105. (new) An industrial product comprising the modified starch of claim 93.

106. (new) The industrial product of claim 100, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

107. (new) The industrial product of claim 101, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

108. (new) The industrial product of claim 102, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

109. (new) The industrial product of claim 103, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.

110. (new) The industrial product of claim 104, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.



111. (new) The industrial product of claim 105, which is selected from the group consisting of paper, cardboard, adhesive, textile, plaster, concrete, fertilizer, medicine, toothpaste, and coal.